Предел последовательности

$\boxed{1}$ $\lim\limits_{n\to\infty} \dfrac{10^{100}n}{n^2-1}$

$\boxed{2}$ $\lim\limits_{n\to\infty} \dfrac{4n^2-3n+1}{100n-3}$

$\boxed{3}$ $\lim\limits_{n\to\infty} \dfrac{20n^2+4n+1}{n^3-10n^2+3n-2}$

$\boxed{4}$ $\lim\limits_{n\to\infty} \dfrac{13n^2-10n-5}{8n^2+7n-5}$

$\boxed{5}$ $\lim\limits_{n\to\infty} \dfrac{20n^{\frac{9}{4}}+3n-\frac{12}{n}}{31n^{\frac{3}{2}}-5n^2-8n-1}$

$\boxed{6}$ $\lim\limits_{n\to\infty} \dfrac{\sin n}{n}$

$\boxed{7}$ $\lim\limits_{n\to\infty} \left(\sqrt{n+1}-\sqrt{n}\right)$

$\boxed{8}$ $\lim\limits_{n\to\infty} \left(\dfrac{1}{1\cdot 2}+\dfrac{1}{2\cdot 3}+\cdots+\dfrac{1}{n\cdot(n+1)}\right)$

$\boxed{9}$ $\lim\limits_{n\to\infty} \sqrt[n]{n}$

$\boxed{10}$ $\lim\limits_{n\to\infty} \left(\sqrt[2]{2}\sqrt[4]{2}\sqrt[8]{2}\ldots\sqrt[2^n]{2}\right)$

$\boxed{11}$ $\lim\limits_{n\to\infty} \dfrac{n^{100}}{2^n}$

$\boxed{12}$ $\lim\limits_{n\to\infty} \dfrac{100^n}{n!}$

$\boxed{13}$ $\lim\limits_{n\to\infty} \sqrt[n]{n!}$

$\boxed{14}$ $\lim\limits_{n\to\infty} \left(\dfrac{1}{n^2}+\dfrac{2}{n^2}+\cdots+\dfrac{n-1}{n^2}\right)$

$\boxed{15}$ $\lim\limits_{n\to\infty} \left(\dfrac{1^2}{n^3}+\dfrac{2^2}{n^3}+\cdots+\dfrac{(n-1)^2}{n^3}\right)$

$\boxed{16}$ $\lim\limits_{n\to\infty} \operatorname{arctg}(n)$